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RUSSIA'S CLIMATE CHANGE CONUNDRUM

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Introduction

Climate change represents a multifaceted challenge for Russia. From an economic standpoint, reduced government revenues from energy exports, as experienced during the COVID-19 pandemic due to a gradual phasing out of fossil fuels, led to budgetary constraints. Then there is the risk of stranded infrastructural assets: vulnerable energy infrastructure in Russia's Arctic region risks being severely damaged and rendered economically useless due to melting permafrost. Politically, climate change risks reducing its capacity to exert influence abroad as Moscow's status of a global "energy powerhouse" may fade. The erosion of this status means that Russia risks losing political leverage over major oil and gas consuming nations.

Russia's approach to climate change

Russia is the fourth largest emitter of greenhouse gas emissions worldwide.¹ In terms of industrial greenhouse gas emissions, the Russian Federation is also home to one of the world's most polluting companies: state-owned gas company Gazprom.² Russia has been a party to the Kyoto Protocol and ratified the Paris Climate Agreement.³ In its National Determined Contribution, Moscow pledged a reduction in emissions of 70% below 1990s levels, taking in account the maximum possible absorptive capacity of forests and other ecosystems, and subject to sustainable and balanced social economic development of Russia.¹ Although sounding ambitious, the target has actually been widely criticised as it takes the final years of the Soviet Union as its baseline. In 1990, Soviet heavy industry was still producing at full speed. Following the USSR's collapse into individual countries, and with it the demise of large parts of Soviet-era heavy industry, it is comparatively easy for Russia today to commit to reducing greenhouse gas levels, knowing that these are a mere fraction of what they were in 1990 for the Soviet Union as a whole. According to Carbon Tracker, an international environmental non-governmental organisation, under Russia's current policies, and after the effects of the COVID-19-related economic slowdown are considered, Russia's emissions are projected to decline between 32 and 37% by 2030.¹¹ If various carbon sinks (anything that absorbs more carbon from the atmosphere than it releases, such as plants, the ocean etc.) are considered, Russia's emissions are expected to decline between 38 to 43% relative to 1990 levels.⁴ In other words, under its existing pledges, Russia can expect to see its greenhouse gas emissions stay below what it emitted in 1990. It should not come as a surprise therefore that the Kremlin views this as a kind of free pass to pollute at will and clinch onto its status of a major hydrocarbon producer.

Prioritisation of hydrocarbons

In its new Energy Strategy to 2035, Russia speaks of vastly expanding its domestic production and consumption of fossil fuels, strongly emphasising growth in natural gas exports through liquefied natural gas (LNG). Sustaining export revenues, whilst maintaining social stability through reigning in domestic prices are among the government's top priorities. The climate agenda is the last point that received attention and is the lowest in order of the Strategy's priorities, as Russia can easily meet its Paris Climate Agreement targets without resorting to major investments.⁵ Despite its own marginal contribution, Russia routinely criticises other – chiefly Western – nations for their historic responsibility in the fight against climate change. The United States' (US) pullback from the Paris Agreement in November 2020 was a welcome opportunity in this regard and Moscow happily jumped at the occasion.⁶ Although the US has since re-joined the Paris Agreement, Russia continues – by referencing its own pledges, however negligible these may be – to turn the climate agenda into another avenue through which it may be able to pressure the West.

The economic and political cost of climate change for Russia

¹ Nationally Determined Contribution of the Russian Federation of 25 November 2020.

¹¹ Relative to 1990 levels.

Russia is the leading oil and gas supplier to the European Union (EU) and the largest oil exporter to China.⁷ Russia has shown scepticism to climate change mitigation efforts as its economic and political power hinges on remaining a 'global fossil fuel powerhouse'.⁸ On the other hand, the EU and China - Russia's two largest energy customers - have committed to achieving carbon neutrality by 2050 and 2060 respectively.^{III} This commitment to a distancing from fossil fuels (*i.e.* oil and gas) represents a major economic and geopolitical risk to Russia in the long term. Oil and gas exports make up 60% of Russia's total exports, and revenues from fossil fuels account for 30% of its GDP.⁹

The COVID-19 pandemic has given the world a prelude of the potential economic repercussions when global oil demand and oil prices collapsed during confinement measures and global lockdowns. Russia's oil export revenues contracted by 41% between January and November 2020.¹⁰ Russia exported approximately \$73 billion worth of oil in 2020, compared to \$160 billion a year earlier.¹¹ Russia's largest oil company, state-owned Rosneft, experienced a 79% decline in profits in 2020.¹² This financially challenging new environment may be temporary due to the ongoing COVID-19 pandemic. However, global efforts to drastically reduce carbon emissions by phasing out fossil fuels remain a long term threat to the Kremlin's powerbase. Reduced economic revenue may potentially affect Russia's ability to offer cheap utilities to its citizens and thus erode Russia's domestic political stability.

In December 2020, the EU unveiled its European Green Deal plan to decarbonise its economy by 2050.^{IV} Throughout 2020, China, Japan and South Korea announced similar pledges.^V Climate change mitigation may alter the EU's and China's relations with carbon intensive exporters such as Russia. For Russia, an EU carbon border tax could be established in 2025. It is estimated that such a tax could cost Russian exporters over \$38 billion in tariffs between 2025-2030.¹³ This may further complicate Russia's trade relations with the EU. Russia's push towards greater use of hydrocarbons may lead to further political isolation as the US, EU, China, Japan and South Korea move ahead towards carbon neutrality in the next decades.

^{III} The European Green Deal provides an action plan to boost the efficient use of resources by moving to a clean, circular economy and cut pollution. The plan outlines investments needed and financing tools available. The EU aims to be climate neutral in 2050. Meanwhile, Chinese President Xi Jinping announced in September 2020 China's objective to have a carbon neutral economy by 2060.

^{IV} The European Green Deal is a set of EU policy initiatives introduced in December 2019 for achieving climate neutrality by 2050.

^V Japan and South Korea announced in November 2020 its objectives to achieve a carbon neutral economy by 2050.

Infrastructure at risk from permafrost degradation

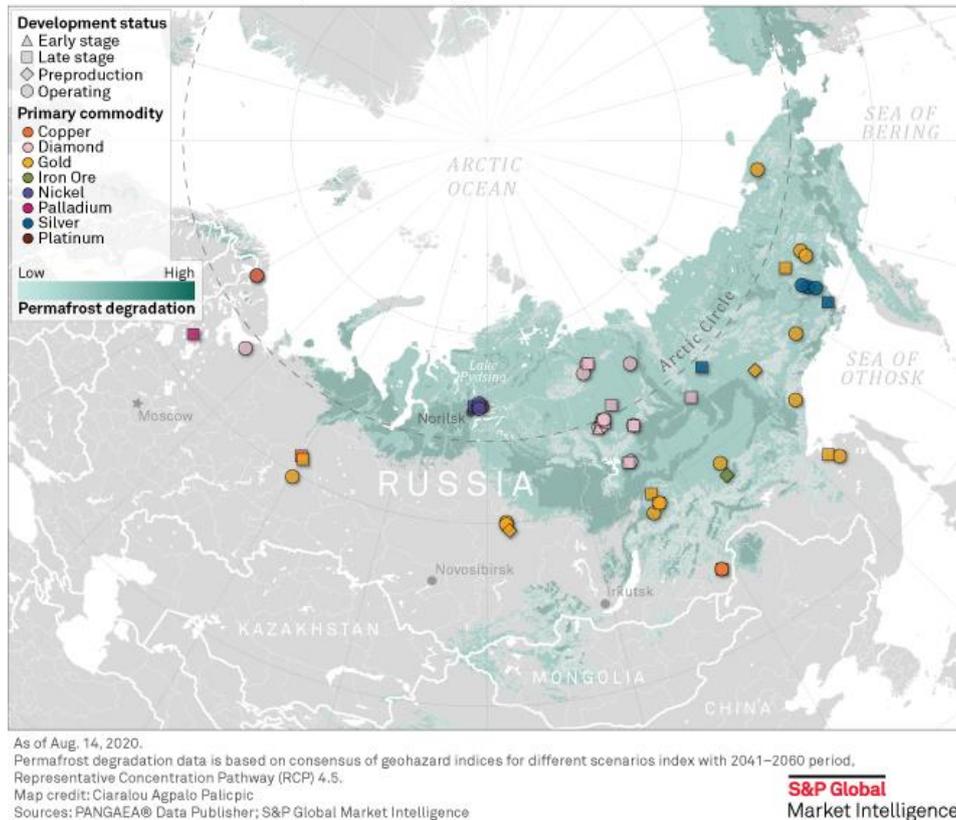


Figure 1: Russian infrastructure at risk from permafrost degradation. (Credit: S&P Global)

Recent environmental disasters also show that climate change could have implications that stretch well beyond financial and environmental impacts on Russia and its long term energy policies. According to scientists, the Arctic region is warming twice as fast compared to the rest of the world and the melting permafrost could cost Russia \$84 billion in infrastructural damage by 2050.¹⁴ In 2017, the Arctic Council already highlighted that the region “will face greater difficulty in the long term in sustaining the infrastructure it holds since the 1980s”.¹⁵ This phenomenon puts Russia’s oil and gas infrastructure and industry at risk as demonstrated by the oil spill in Norilsk in May 2020.^{vi}

The need to overcome lower prices and reduced demand for fossil fuels due to climate change mitigation and the COVID 19 pandemic helped forge new political alliances in energy cooperation in a changing geopolitical landscape. Russia continues to cooperate with rival exporters of the Organization of the Petroleum Exporting Countries (OPEC) in the OPEC+ format to maintain stability in oil markets.^{vii} Meanwhile, Russia also has attempted to diversify its energy customer base by expanding into China through the Power of Siberia 1 gas

^{vi} The oil spill in Norilsk is the largest ever recorded in the polar Arctic. On 29 May 2020, 20,000 tons of diesel leaked into the water and soil from a storage tank owned by Norilsk Nickel near Norilsk, turning the Ambarnaya River red. The company was fined \$2.1bn in damages.

^{vii} The OPEC+ format gathers 24 oil-producing economies, 14 members of OPEC and 10 other non-OPEC countries, including Russia. It aims, since 2017, to coordinate oil production in a bid to stabilise prices in a low priced challenging environment.

pipeline and double down on its existing market share in Europe by constructing Nord Stream 2 and TurkStream natural gas pipelines.^{viii}

Opportunities for Russia stemming from climate change

Melting permafrost in the Arctic is as much an opportunity for Moscow as it is a potential catastrophe. Climate change opens up new shipping routes and enables access to Arctic oil and gas resources. The Russian government acknowledges the need to “move fast to get most of these reserves in the Arctic” as large hydrocarbon consumers (EU, China, Japan) are aligning themselves on carbon neutrality goals.¹⁶ However, instead of diversifying its economy, Russia is keen on monetising the vast – but costly – resources in the Arctic before it is too late.¹⁷

The opening of the Northern Sea Route (NSR) from Asia to Europe offers a greater potential for maritime trade and for accessing vast reserves of oil, gas and minerals. Russia hopes to increase shipping via Arctic waters from 32 million metric tons (MMT) in 2020 to 80 MMT of cargo by 2024.¹⁸ The Kremlin hopes that the NSR allows it to shift traffic away from the Malacca Strait and Suez Canal in Egypt, and turn Russia’s Arctic into a major global trade hub. Either way, the NSR is not estimated to be open year-round before 2050. Russia’s upcoming chairmanship of the Arctic Council from May 2021 to 2023 may be consequential in shaping the navigational opportunities that climate change brings by way of the NSR.

Russia is committed to preserving its energy “supremacy”

Hitherto, Russia’s role as a major energy supplier and owner of critical energy infrastructure has served as a shield against any external political and economic pressure.¹⁹ Looking ahead, Russia is expected to try to preserve its energy “supremacy” and “lock in” customers before climate change mitigation puts its economic and political interests at risk. This means that Russia needs to capitalise on large-scale energy projects sooner rather than later in both Europe and Asia. This explains Moscow’s emphasis on completing projects such as Nord Stream 2, Turk Stream 2 and the Power of Siberia 2, as these all provide long term economic and political security to Russia’s hydrocarbon-dominated economy.

By contrast, growing energy independence from Russian energy sources among key-consumer nations and the gradual phasing out hydrocarbons in general will intrinsically enable greater economic, political and environmental resilience. Specifically, Russia’s attempts at further developing its Arctic natural resources risk upsetting the environmental balance in this pristine area with global repercussions, harming efforts to achieve carbon neutrality by 2050.

^{viii} The Power of Siberia 1 gas pipeline, completed in December 2019, has a capacity to export 38 billion cubic meters (bcm) of Russian gas to China annually. The pipeline spans some 2,200 km from the Chayandinskoye field (Yakutia) to Blagoveshchensk (Chinese border). Gazprom’s TurkStream gas pipeline was inaugurated in January 2020. It includes a 930 km long offshore pipeline under the Black Sea from Russia to Turkey with a capacity of 31 bcm for the Turkish market and Eastern European markets via Bulgaria; Nord Stream 2 is a gas pipeline from Russia to Germany across the Baltic Sea with a capacity of 55bcm (1/4 of Russia’s present gas export to the EU).

¹ Based on 2019 data. The top five is comprised of China, the US, India, Russia and Japan. The EU occupies third place when taken as a whole. See: Daniel Kozin, “Is Russia Finally Waking Up to Climate Change?”, *Moscow Times*, 9 March 2020, <https://www.themoscowtimes.com/2020/03/04/is-russia-finally-waking-up-to-climate-change-a69517>.

² According to the Carbon Majors Report, Gazprom was the third biggest emitter of industrial greenhouse gases over the period stretching from 1988 to 2015. Gazprom came in third place, just after Saudi Aramco and Chinese coal. See: Paul Griffin, “The Carbon Majors Database. CDP Carbon Majors Report 2017”, *CDP*, <https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf>

³ Ukaz Prezidenta Rossijskoj Federacii ot 04.11.2020 Nr. 666 “O sokrashhenii vybrosov parnikovyh gazov”, *Oficialnyj portal pravovoj informacii*, <http://publication.pravo.gov.ru/Document/View/0001202011040008>.

⁴ “Russia formally submits NDC update to UNFCCC”, *Climate Tracker*, <https://climateactiontracker.org/climate-target-update-tracker/russian-federation/>

⁵ See: Tatiana Mitrova and Vitaly Yermakov, “Russia’s Energy Strategy-2035 Struggling to Remain Relevant”, *IFRI*, December 2019, p. 16,

https://www.ifri.org/sites/default/files/atoms/files/mitrova_yermakov_russias_energy_strategy_2019.pdf.

According to the World Resources Institute, although hydropower is expected to grow 28% until 2050, it will still only account for 16% of Russia’s total electricity mix in 2030 and 18% in 2050. Other forms of renewable energy will account for only 1.9% of the electricity mix in 2030 and 4.4% in 2050.

⁶ See for example: “US decision to quit Paris climate agreement regrettable, says Russian diplomat”, *TASS*, 8 November 2019, <https://tass.com/politics/1087658>.

⁷ The EU imported around 40% of its gas and 30% of its oil from Russia in 2019, see: “From where do we import energy?”, *Eurostat*, <https://ec.europa.eu/eurostat/cache/infographs/energy/bloc-2c.html#carouselControls?lang=en>; Russia was the largest oil supplier to China in 2018, accounting for 16% of China’s annual oil demand worth c. \$40 bn. See: Daniel Workman, “Top 15 Crude Oil Suppliers to China”, *World Top Exports*, 2020, <https://www.worldstopexports.com/top-15-crude-oil-suppliers-to-china/>.

⁸ “Russia does not have a plan to transition away from fossil fuels”, *World Oil*, February 2021. <https://www.worldoil.com/news/2021/2/9/net-zero-regulation-russia-will-replace-all-the-us-oil-biden-wants-to-ban>.

⁹ Greg Depersion, “How does the price of oil affect Russia's economy?”, *Investopedia*, 11 April 2021.

<https://www.investopedia.com/ask/answers/030315/how-does-price-oil-affect-russias-economy.asp>

¹⁰ Murat Temizer, “Russia's gas revenue down 41.8% between Jan-Nov 2020”, *Anadolu Agency Energy*, 18 January 2021, <https://www.aa.com.tr/en/energy/finance/russias-gas-revenue-down-418-between-jan-nov-2020/31628>.

¹¹ Nicholas Trickett, “COVID-19: A Reckoning for Russia’s Asian Energy Aims”, 21 May 2020, *The Diplomat*, <https://thediplomat.com/2020/05/covid-19-a-reckoning-for-russias-asian-energy-aims/>.

¹² Irina Slav, “Russian Oil Giant Rosneft Sees Profits Slide 79% In 2020”, *OilPrice*; February 2021.

<https://oilprice.com/Energy/Crude-Oil/Russian-Oil-Giant-Rosneft-Sees-Profits-Slide-79-In-2020.html>.

¹³ Based on estimates of KPMG consultants. See: “EU Carbon Tax Could Cost Russia 33Bln Euros – RBC”, *Moscow Times*, 7 July 2020. <https://www.themoscowtimes.com/2020/07/07/eu-carbon-tax-could-cost-russia-33bln-euro-a70812>.

¹⁴ Yuliya Fedorinova, Olga Tanas, “Russia's Thawing Permafrost May Cost Economy \$2.3 Billion”, *Bloomberg*; 18 October 2019, <https://www.bloomberg.com/news/articles/2019-10-18/russia-s-thawing-permafrost-may-cost-economy-2-3-billion-a-year>.

¹⁵ Toby Woodhall, “Rising temperatures leave Russia's Arctic ambitions on thin ice”, *S&P Global*, 7 September 2020, <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/rising-temperatures-leave-russia-s-arctic-ambitions-on-thin-ice-59646990>.

¹⁶ Oksana Kobzeva, “Russian LNG, natural gas shouldn't compete in export markets, Gazprom says”, *Reuters*, 25 February 2021, <https://www.reuters.com/article/russia-gas-lng-idINL8N2KV4SP>.

¹⁷ Arctic oil production requires a breakeven oil price of \$100- \$110 per barrel. See: Viktor Katona, “Russia's Relentless Quest For Arctic Oil”, *OilPrice*, November 2020, <https://oilprice.com/Energy/General/Russias-Relentless-Quest-For-Arctic-Oil.html>.

¹⁸ Robyn Dixon, “While the world tore its hair out over the Suez, Russia saw an opportunity”, *Washington Post*, 29 March 2021, https://www.washingtonpost.com/world/russia-suez-touts-arctic-sea-route/2021/03/29/576f6794-9097-11eb-aadc-af78701a30ca_story.html; “Russia: Council renews economic sanctions over Ukrainian crisis for six more months”, *Council of the European Union*, 29 June 2020, <https://www.consilium.europa.eu/en/press/press-releases/2020/06/29/russia-council-renews-economic-sanctions-over-ukrainian-crisis-for-six-more-months/>.

¹⁹ For example, until today the EU has avoided to directly sanction Russia’s oil and gas sector, instead denying access to financing and technologies that can be used in the Russian energy sector. See: Henry Meyer, Andrey Biryukov, “Russia Warns EU It’s Ready to Break Off Ties Over Sanctions”, *Bloomberg*, 12 February 2021, <https://www.bloomberg.com/news/articles/2021-02-12/russia-warns-eu-it-s-ready-to-break-off-relations-over-sanctions>; “Russia: Council renews economic sanctions over Ukrainian crisis for six more months”, *Council of the European Union*, 29 June 2020, <https://www.consilium.europa.eu/en/press/press-releases/2020/06/29/russia-council-renews-economic-sanctions-over-ukrainian-crisis-for-six-more-months/>.